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A NEW SPECIES OF *MEGASELIA* IN GROUP VII (DIPTERA: PHORIDAE)

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Abstract.—*Megaselia* (*Megaselia*) ***alsea*** is described as a new species from Oregon. Larvae of this phorid were found associated with the egg masses of the caddisfly *Hydatophylax hesperus* (Banks). Illustrations of the male and female genitalia are provided.

Megaselia alsea is a new species belonging to *Megaselia* (*Megaselia*) Group VII. It is close to *M. modesta* Brues in Borgmeier's (1966) key to North American Group VII species, but can be distinguished by the male and female genitalia. The objective of this paper is to describe the new species (Robinson) and present information on its biology and habits (Wisseman).

Megaselia (*Megaselia*) *alsea* Robinson, NEW SPECIES

Figs. 1–6

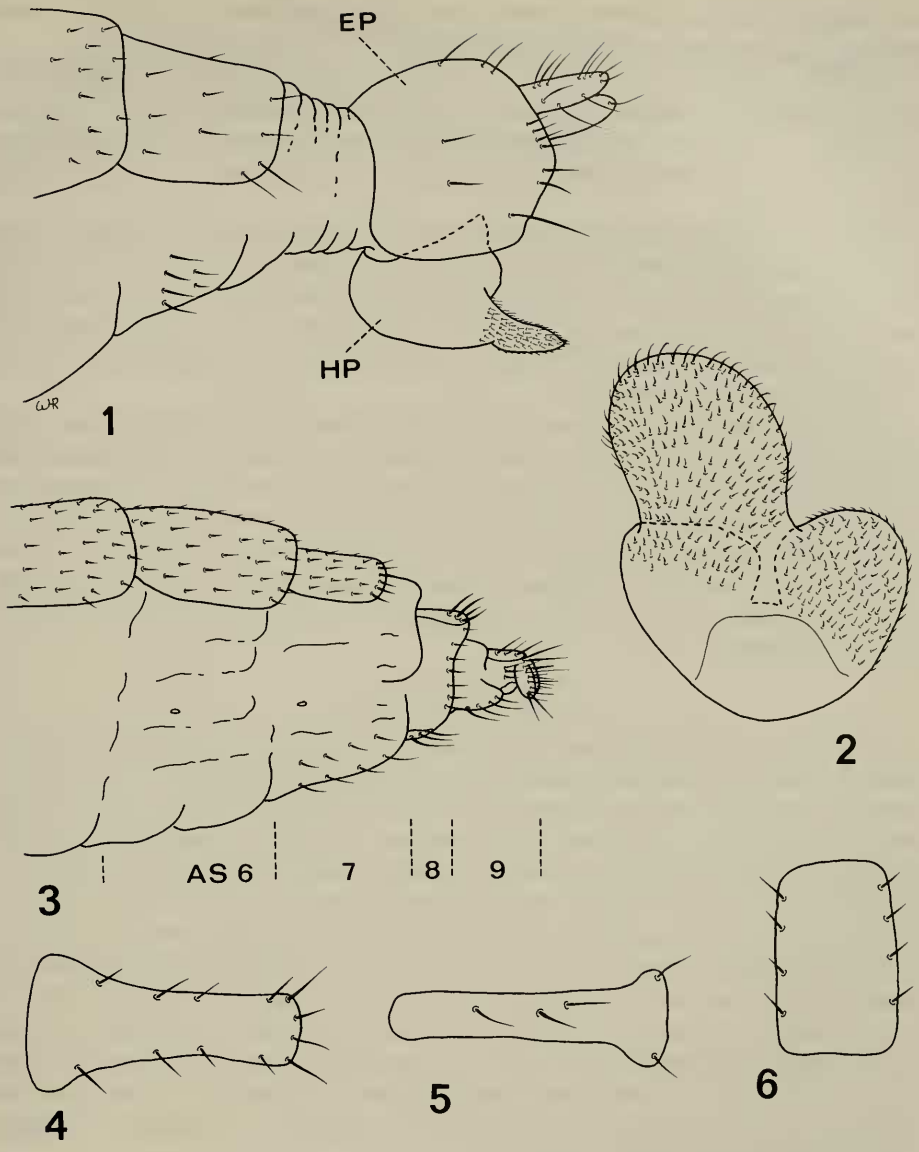
Diagnosis.—This species differs from other Nearctic Group VII species by the character combination: Halter brown; costa 53% of wing length; costals long; frons dull, broader than high. *Terminalia:* Epandrium (Fig. 1) with 9–11 setae laterally, 1 long seta posterolaterally; hypandrium (Fig. 2) setulose, lobe large, and setulose. *Oviscapt:* Tergum VII (Fig. 4) long and narrowed posteriorly; sternum VII (Fig. 5) long and broadened posteriorly.

Description.—Body brown. Frons dull, setulae distinct, distinctly wider than high; supra-antennals subequal; lower fronto-orbital bristle closer to anterior fronto-orbital than to upper supra-antennal. Parafacia of male with 6–10 bristles, female with 10–12 bristles. Palpus pale brown with 6 robust setae, pointed apically.

Thorax brown to dark brown; propleuron with 5 dorsal bristles adjacent to spiracle, and 4 bristles at the ventral margin. Mesopleuron bare. Scutellum with 2 robust bristles.

Abdominal terga and venter brown, terga distinct, subequal in length and width. Male terminalia pale brown, small, with fine setulae, no bristles, proctiger yellowish brown; epandrium (Fig. 1) small, slightly pointed posterolaterally, with 9–11 setae laterally and 1 long seta posterolaterally; hypandrium (Fig. 2) setulose, lobe large and setulose, apical seta long and slightly curved. Female terminalia pale brown, tergum VII (Fig. 4) long and narrowed posteriorly; sternum VII (Fig. 5) long and broadened posteriorly.

Legs pale brown; forefemur deeply grooved ventrally to accept foretibia; fore-



Figs. 1–6. *Megaselia alsea*, terminalia. 1, Male terminalia. 2, Male hypandrium. 3, Female terminalia. 4, Female tergum 7. 5, Female sternum 7. 6, Female tergum 8. Abbreviations: AS 6 = abdominal segment 6; 7 = abdominal segment 7; 8 = abdominal segment 8; 9 = abdominal segment 9; EP = epandrium; HP = hypandrium.

tibia with indistinct antero- and posterodorsal bristles. Midtibia with 6–7 posterodorsal bristles adjacent to hair seam; hair seam extending to ½; midbasitarsus with strong bristle at basal $1/6$. Hindfemur with 6 long setae on apical ⅓; hindtibia with 18 weak posterodorsal bristles.

Wing 1.85–1.88 mm long; membrane light brown, veins brown; costa 53% of

wing length; ratio of costal divisions 1.0:1.5:2.5; costal bristles as long as costal division III; 3 axillary bristles. Halter brown.

Material examined.—♂ holotype, 2 ♀ paratypes, Flynn Creek, Siuslaw Natl. Forest, Lincoln Co., Oregon, August 19, 1981, B. Wisseman.

Holotype.—♂, Flynn Creek, Siuslaw Natl. Forest, Lincoln Co., Oregon, August 19, 1981, B. Wisseman. Deposited in the National Museum of Natural History, Washington, D.C.

Biology.—Third-instar phorid larvae were found associated with the egg masses of the limnephilid caddisfly *Hydatophlax hesperus* (Banks). Adults of this caddisfly emerge in the summer and oviposit on wood or vegetation at or above the waterline, in forested headwater streams of the Pacific Northwest. The globular egg masses (1.5–3.0 cm diameter) typically contain 200–300 eggs dispersed in an amorphous gelatinous matrix.

Six masses, each hosting from 1–7 phorid larvae, were collected from damp wood (above waterline) at Flynn Creek, Oregon Coast Range. These masses were cultured on wet filter paper at room temperature. Phorid larvae were observed scavenging in the gelatinous matrix. Within 5 days of collection, all larvae had left the gelatinous matrix and formed puparia on the wetted filter paper. Whether the phorid is a parasite on the eggs or hatched caddisfly larvae cannot be determined, since observations to date on larval activity only encompass the stage just prior to pupation.

Group VII Biology

The practice of partitioning the hundreds of *Megaselia* species into eight "artificial" groups, as frequently done by other authors (Lundbeck, 1922; Schmitz, 1956; Borgmeier, 1964) has been followed here. Group VII contains 40 described species in North America. There is information on the larval and/or adult biology for nearly half of the species in the group (Robinson 1971). The species reported associated with fungi include *M. straminipes* (Malloch), *M. flava* (Fallén), *M. lutea* (Meigen), *M. eisfelderae* Schmitz, *M. nigra* (Meigen), and *M. fungicola* (Coquillett). Species known to feed (as larvae) on a variety of decaying plant and animal material include *M. scalaris* (Loew), *M. longipennis* (Malloch), *M. cavernicola* (Brues), *M. pulicaria* (Fallén), *M. rufipes* (Meigen), *M. setacea* (Aldrich), *M. breviterga* (Lundbeck), and *M. picta* (Lehmann). The species reported associated with plants is *M. seticauda* (Malloch), and the species reported associated with caves is *M. glabrifrons* (Wood). *Megaselia alsea* is the only group VII species reported associated with living insects.

Acknowledgments

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Literature Cited

Borgmeier, T. 1964. Revision of the North American phorid flies. Part II. The species of the genus *Megaselia*, subgenus *Aphiochaeta*. Stud. Entomol. 7: 257–416.

———. 1966. Revision of North American phorid flies. Part III. The species of the genus *Megaselia*, subgenus *Megaselia*. Stud. Entomol. 8(1965): 1–160.

Lundbeck, W. 1922. Dipteria Danica. Genera and species of flies hitherto found in Denmark. Vol. 6: Pipunculidae, Phoridae. G.E.C. Gad, Copenhagen. 455 pp.

Robinson, W. H. 1971. Old and new biologies of *Megaselia* species (Diptera: Phoridae). Stud. Entomol. 14: 321–348.

Schmitz, H. 1956. Phoridae Pp. 369–416. *In* Linder, E., ed., Die Fliegen der Palearktischen Region. Vol. 4, Pt. 7. E. Schweizerbart'sche Verlag, Stuttgart (Lief. 187).